

Methods: We observed 407 patients with T2DM after elective percutaneous coronary intervention (PCI). Patients were divided into three groups based on early morning urinary albumin: negative urinary albumin group (n=325), trace urinary albumin group (urine dipstick trace, n=41), and positive urinary albumin group (urine dipstick $\geq 1+$, n=41). Kaplan-Meier curve analysis was used to compare the cumulative rates of clinical outcomes (all cause death; cardiac death; MACE: cardiac death, myocardial infarction, stroke or revascularization; cardiac-cerebral diseases rehospitalization) during the 25-month (IQR: 17-37 month) follow-up. Cox regression was performed to assess risk factors of all cause death.

Results: In-hospital death occurred in 3 patients (0.7%), including 1 (0.3%) in the negative albuminuria group, 2 (4.9%) in the trace group, and 0 (0%) in the positive group ($P=0.324$). Positive albuminuria was related with the occurrence of acute heart failure, acute kidney injury and dialysis during hospitalization. The cumulative rates of all-cause death (35.1% vs. 11.3% vs. 6.3%, log rank $P<0.001$; negative vs. trace: $P=0.184$, negative vs. positive: $P^1<0.001$, trace vs. positive: $P=0.025$), cardiac death (30.3% vs. 8.2% vs. 5.2%, log rank $P<0.001$; negative vs. trace: $P=0.384$, negative vs. positive: $P^1<0.001$, trace vs. positive: $P^2=0.020$) and cardiac-cerebral diseases rehospitalization (69.1% vs. 41.2% vs. 37.0%, log rank $P<0.001$; negative vs. trace: $P=0.543$, negative vs. positive: $P<0.001$, trace vs. positive: $P=0.036$) were higher in the albumin positive group compared with the trace and negative groups and there was significant difference between groups MACE (49.6% vs. 31.6% vs. 31.6%, log rank $P<0.001$). After adjusting for potential confounding risk factors, urinary albumin (HR=1.903, 95%CI 1.284-2.820, $P=0.001$) remained significantly associated with all cause death, meanwhile age >65 years, LVEF $<40\%$, eGFR <60 ml/min/1.73 m² and acute kidney injury were predictive risk factors for all cause death.

Conclusions: Preprocedural albuminuria indicated poor clinical outcomes, and was predictive risk factors for all cause death in patients with T2DM after elective percutaneous coronary intervention.

GW25-e3288

The correlation between balloon release pressure and no-reflow in acute myocardial infarction undergoing direct PCI

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Objectives: Balloon release pressure may increase the incidence of no reflow after direct percutaneous coronary intervention (PCI). This randomized controlled study designed to analyze the correlation between balloon release pressure and no-reflow in acute myocardial infarction (AMI) patients undergone direct PCI.

Methods: There were 156 acute myocardial infarction patients underwent PCI from January 1 2010 to December 31 2012 were divided into two groups according to the stents inflation pressure. They were conventional pressure group and high pressure group. After PCI, angiography was operated to assess the thrombolysis in myocardial infarction (TIMI) grade with related artery. Examinations were undertaken on all patients before and after operation including cardiac enzymes, total cholesterol, low-density lipoprotein, blood glucose, homocysteine, β -thromboglobulin (β -TG), Hamilton depression scale (HAMD) and Self-rating anxiety scale (SAS). After interventional therapy, afore-mentioned parameters in conventional pressure group and high pressure group were analyzed.

Results: The results showed that CK-MB, HAMD, SAS have significant difference ($P<0.05$) in all patients after PCI, especially in CK-MB of high pressure group (25.7 ± 7.6 vs. 76.7 ± 11.8 U/L). Furthermore, CK-MB, HAMD, SAS, β -TG were comparative before PCI but they have significant changes ($P<0.05$) after intervention done. No-reflow phenomenon occurred in 13 patients in high pressure group, which was severely higher than conventional pressure group (17.11 vs. 6.25%, $P<0.05$).

Conclusions: In stent implantation, using a pressure less than 1823.4 kPa balloon to release pressure may be the better choice to reduce the occurrence rate of no reflow during direct PCI.

GW25-e3376

Cardiac risk assessment in patients with coronary artery disease in noncardiac surgery

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Objectives: To study the risk of cardiac complications after noncardiac surgery in patients with coronary artery disease (CAD), suffering from different tumors and undergoing different surgical procedures.

Methods: In this study, 128 patients were involved from 01/2009 to 12/2013 in the ICU of Shanxi Tumor Hospital, including 75 males and 53 females with a mean age of 68 years old. All patients had known CAD which has been confirmed preoperatively by angiogram. During angiogram, it was found that 298 coronary arteries were diseased with stenosis ranging from 50% to 100% (table 1). All patients had been diagnosed with tumors and undergone different surgical procedures (table 2). The cardiovascular complications were monitored closely by measures of significant arrhythmia, Acute Coronary Syndrome (ACS), including unstable angina, AMI and

cardiac arrest, acute heart failure, cardiac shock and cardiac death. All the patients were monitored by measures of: (1) Life signs (temperature, pulse rate, respiratory rate and blood pressure). (2) Bedside ECG (twice a day) and B-type Natriuretic Peptide (BNP) and Troponin-I (TNI). (3) Electrolyte balance status. (4) Fluid balance status. (5) Intraoperative Hemodynamic status. (6) Types of General Anesthesia (GA) (7) Duration of operation.

Results: From this study, it was found that BNP elevated in 46 cases, and TNI in 32 Cases. Cardiovascular events were recorded in 30 cases (account for 24%) including 5 cases of cardiac death (account for 4%), 4 cases of ACS, 5 cases of significant arrhythmia (account for 4%), 20 cases of Heart failure (account for 16%). This study clearly suggested that the risk of cardiovascular events was closely related to the age, sex, severity of coronary stenosis, hemodynamics status during general anesthesia, post-operation fluid positive balance status, electrolyte imbalance and the location of the tumor. However, this study didn't show any significant relationship to the size of operation, duration of the operation and the types of GA (intravenous anesthesia, intravenous and inhalation combination anesthesia).

Conclusions: Preoperative cardiovascular assessment was necessary for patients with CAD who was going to undergo noncardiac surgery. It was equally important to monitor the hemodynamic status and life signs perioperatively, maintain fluid and electrolyte balance strictly after the operation. It's concluded that: (1) Elderly patients especially female had higher risks of complications. (2) The severer of the stenosis of the coronary artery was, the higher the risk. (3) positive fluid balance was a higher risk of complications. (4) electrolyte imbalance resulted in higher risk.

GW25-e4290

Efficacy and Safety of limus-eluting stent versus paclitaxel-eluting stent in patients with diabetes mellitus undergoing percutaneous coronary intervention: A meta-analysis

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Objectives: To compare the safety and efficacy of Limus-eluting stents (LES) and paclitaxel-eluting stents (PES) in patients with diabetes mellitus (DM) undergo percutaneous coronary intervention.

Methods: Recent data on drug-eluting stents have shown improved clinical outcomes in patients with diabetes mellitus. But, the relative efficacy and safety of different generation LES (including everolimus, zotarolimus, and sirolimus) compared with paclitaxel-eluting stents (PES) remains controversial. Therefore, a meta-analysis of clinical trials was performed to compare LES with PES in patients with diabetes.

Results: A total of 28 clinical trials were included in the present meta-analysis, involving 23,678 patients (9953 in the SES group, 4209 in the EES or ZES group, 9516 in the PES group). SES were significantly more effective in the reduction of target lesion revascularization in short-term (3.6% vs 6.3%, odds ratio [OR] 0.659, $P=0.014$), but no difference in TVR, ST, MI, death or MACE ($P>0.05$). In the long term follow-up, there are no difference between the SES and PES in TLR, TVR, ST, MI, death or MACE ($P>0.05$). The second generation stent of LES, including EES and ZES, is better than PES in reduction of ST (2.1% vs 3.3%, odds ratio [OR] 0.586, $P<0.001$), MI (2.3% vs 4.1%, odds ratio [OR] 0.527, $P=0.001$), and MACE (8.0% vs 10.3%, odds ratio [OR] 0.796, $P=0.007$).

Conclusions: This meta-analysis demonstrates that, as compared to PES, the first generation of LES are similar in respect of MACE in short-term or long-term follow-up. But the second generation of LES is superior to PES in reducing the incidences of stent thrombosis, MI and MACE in patients with diabetes, with nonsignificant differences in terms of TLR, TVR and all cause of death.

GW25-e4594

IVUS-guided Wire Penetration Technique in Rechanneling of Coronary Chronic Total Occlusion Arteries

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Objectives: The aim of this study is to probe safety and efficacy of IVUS guided wire penetration technique in rechanneling of coronary chronic total occlusion arteries.

Methods: The inpatients, whose coronary angiography showed chronic total occlusion lesion while could not determine the wire progress orientation, were selected in this study. IVUS catheter were introduced to target vessel to help verifying the starting anatomy character of occluded segment and whether the guiding wire was in the true or false lumen, then guiding the progress of guiding wire. As IVUS showed the wire was in the true lumen of the occluded artery, proper stents were choose and placed according to the diameter and length of the lesion. Success rate, operation time, X-ray time, contrastor dosage was recorded. Complications such as coronary perforation, death, acute myocardial infarction, acute heart failure and cardiac tamponade were recorded during hospitalization and 6-month follow-up.

Results: A total of 23 continue CTO lesion were enrolled in our one year study, 20 of them were successfully implanted stents, the success rate was 87%. The reason of all the 3 failure cases was due to guiding wire progressing in the false lumen of sub-intimal and could not adjust back to the true lumen. One coronary perforation was found but without cardiac tamponade, no serious complications such as acute myocardial infarction, acute heart failure, death and target vessel rebuilding.

Conclusions: IVUS guided wire penetration technique was helpful in rechanneling of difficult chronic total occlusion lesions and the procedure was safe.

GW25-e5258

Analysis effect of circadian rhythm of blood pressure on cardio-cerebral vascular events recurrence in elderly patients with acute myocardial infarction combined with hypertension

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Objectives: 24h ambulatory blood pressure circadian rhythm were detected to explore the effects of cardio cerebral vascular events in elderly patients with acute myocardial infarction combined with hypertension.

Methods: 116 cases patients were divided into anti-dipper type group, non-dipper type group and dipper type group according to the rhythm pattern of dynamic blood pressure. The carotid intima media thickness (IMT) was measured with ultrasonic diagnosis instrument in patients, dynamic blood pressure parameters were detected with non-invasive ABPM instrument, and patients were followed up for 3.5-5 years and recorded the major cardiovascular events.

Results: 4h SBP, 24h PP, nSBP and nPP and cardio cerebral vascular event rate were higher in non-dipper type group and anti-dipper group than the dipper type group. The difference was statistically significant ($P<0.05$). Detection rate of carotid artery intima-media thickness, carotid artery plaque level 1, level 2 were higher in non-dipper type group and anti-dipper type group than the dipper type group. The difference was statistically significant ($P<0.05$). IMT in non-dipper type group and anti-dipper group ($1\leq\text{IMT}<1.3\text{mm}$ and $\text{IMT}\geq 1.3\text{mm}$) was positively correlated with nSBP ($P<0.05$).

Conclusions: Circadian rhythm of blood pressure changed in elderly patients with acute myocardial infarction combined with hypertension. Incidence of cerebrovascular accident increase with Circadian rhythm of ambulatory blood pressure disappearing, nocturnal systolic blood pressure continuing to increase, and arteriosclerosis disease increasing.

GW25-e0533

Clinical characteristics and efficiency of interventional therapy of coronary artery involvement in Takayasu's arteritis

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Objectives: To analyze the clinical characteristics, efficiency of interventional therapy of coronary artery involvement in Takayasu's arteritis.

Methods: We retrospectively studied the patients who had more than 50% diameter reduction of coronary artery by angiography, of 98 consecutive hospitalized patients with Takayasu's arteritis from 2000 to 2013 in PUMC hospital.

Results: There were totally 6 cases with coronary artery involvement of Takayasu's arteritis, which accounted for 6.1% (6/98) of all the hospitalized patients with Takayasu's arteritis. All the cases were female, aged 15-51 (32 ± 16) years. All the cases presented with typical angina pectoris, with depression of ST segment in electrocardiogram. Of the 6 cases, the myocardial enzyme elevated in 5 cases, fulfilled the diagnosis of non-ST elevated myocardial infarction. 4 cases had peripheral arterial involvement, while the other 2 cases had only coronary involvement. Coronary angiography was useful for definitive diagnosis. Coronary ostia were most frequently involved. 5 patients received successful coronary revascularization with drug-eluting stent, which improved the symptom of angina pectoris. However, 1 patient developed restenosis in the stent 3 months after PCI.

Conclusions: Coronary artery involvement in Takayasu's arteritis is not rare, usually the ostia. The patient usually present with non-ST elevated myocardial infarction. PCI with drug-eluting stent can improve the symptom, but the long-term effect should be investigated further.

GW25-e1611

The Effects of Activating Blood Circulation and to Remove Stasis on Platelet Activity after Percutaneous Coronary Intervention

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Objectives: There are some deficiencies in the standard dual antiplatelet therapy in prevention of in-stent thrombosis after percutaneous coronary intervention (PCI). It seems to be a process that operative-trauma causes blood stasis after stent implantation. Based on this idea, this project employed the principle of randomized-control study to monitor the platelet dynamic activity with the thrombelastography (TEG) equipment to provide preliminary experimental basis for activating blood circulation to remove stasis after PCI.

Methods: 60 patients with Blood-stasis syndrome who had no response to Aspirin or Clopidogrel, were divided randomly into two groups. The control group received dual antiplatelet therapy with Aspirin combined with Clopidogrel. In addition to Aspirin combined with Clopidogrel, the treating group (activating blood circulation group) received the therapy of activating blood circulation to remove stasis in the form of Xuefuzhuyu Capsules 12 tablets per day. Conventional coronary heart disease treatments of western medicine were given to the both group according to the guidelines by Chinese Society of Cardiology. A course of treatment lasted for 4 weeks. Related indexes of effects were recorded and included serum lipid level, blood stasis score. Platelet activity represented by the residual platelet fibrin clot strength of ADP after antiplatelet therapy (the value of MA_{ADP}) was measured by TEG at two time points. Clinical effects and safety of activating blood circulation to remove stasis compound herbal medicines combined with antiplatelet therapy were analyzed overall.

Results: (1) The platelet activity of the activating blood circulation group, as measured by MA_{ADP} , showed statistically significant reduction ($P<0.05$), whereas there was no remarkable difference in the value of MA_{ADP} in the control group ($P>0.05$). (2) The blood-stasis syndrome score also significantly declined ($P<0.01$) in the activating blood group, while in the control group there was no remarkable difference ($P>0.05$). A significant difference ($P<0.05$) was also achieved between the two groups after the treatment. (3) The score of stenocardia improved significantly after the treatment in the activating group ($P=0.001$), whereas a smaller change was also observed in the control group ($P=0.04$). The response achieved a significant difference ($P<0.05$) between these groups. (4) Other measures including TC, LDL, TG declined remarkably in both groups after the treatment ($P<0.05$), but showed no significant difference between the two groups. (5) There was no occurrence of bleeding phenomenon in the both groups during the observation period.

Conclusions: The therapy of activating blood circulation to remove stasis can lower the activity of platelet further on the top of standard dual antiplatelet therapy. It can reduce the value of MA to a safe level without increase of bleeding risk. Furthermore, this therapy can lower patients' TC and LDL levels. Eventually, blood stasis score is improved. Therefore, by combining routine dual antiplatelet therapy with traditional Chinese medicine that activates blood circulation to remove stasis, Aspirin and (or) Clopidogrel resistance may be overcome. This would result in reduction of stent thrombosis and in-stent restenosis, and lower the recurrence risk of ischemic events in both short and long term after PCI.

GW25-e3217

Increased Arterial Stiffness is Associated with Higher SYNTAX Score in Patients with Verified Coronary Artery Disease

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Objectives: SYNTAX score (SS), a maker of complexity and prognosis of coronary artery disease (CAD). Meanwhile, arterial stiffness parameters are well known surrogate marker of atherosclerotic burden and prognostic predictor of CAD. The study aimed to evaluate the association between SS and arterial stiffness in patients with CAD.

Methods: A total of 108 patients with CAD verified by coronary angiography were enrolled. The study population was divided into two groups depending on the tertiles of SS values. A high SS ($n=26$) was defined as a value in the third tertile (>26.0), and a low SS ($n=82$) was defined as a value in the lower two tertiles (≤ 26.0). We used a Doppler echo-tracking (ET) system to assess the arterial stiffness parameters of carotid artery for all subjects.

Results: Stiffness parameters including pressure-strain elasticity modulus (Ep), stiffness index β and pulse wave Velocity β (PWV β) and augmentation index (AI) increased in high SS group ($P<0.05$). Further, all stiffness parameters were positively associated to SS ($P<0.05$).

Conclusions: Our findings indicated arterial stiffness parameters measured by ET system were parallel to the severity of coronary evaluated by SS in patients with verified CAD.

GW25-e4122

The coronary angiographic characteristics of Diabetic patients with high TG/ and low HDL-C

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Objectives: High triglyceride (triglyceride, TG), low density lipoprotein (high density lipoprotein, HDL) is a special type of abnormal metabolism of serum lipids, we put forward the concept of high TG/ and low HDL-C level in 2001. High TG/ and low HDL-C syndrome is common in patients with diabetes, its potential clinical significance is not clear. This study analyzed the diabetic patients with high TG/ and low HDL-C in coronary angiographic characteristics, in order to explore the relationship between high TG/ and low HDL-C levels and coronary artery disease.